Competitions

Sutton Trust
Supports social mobility through programmes, research, and advocacy to improve access to top universities and careers.
https://www.suttontrust.com/

Target Oxbridge
A mentoring programme to help Black African and Caribbean students gain places at Oxford and Cambridge.
https://targetoxbridge.co.uk/#section-3

British Physics Olympiad (BPhO)
Challenging physics problems for school students to test problem-solving skills.
https://www.bpho.org.uk/

UK Young Physicists' Tournament (UKYPT)
Team-based physics research and debate competition.
https://www.iypt.org/

Minds Underground Science Essay Competition
Essay competition encouraging deep scientific thinking and creativity.
https://www.mindsunderground.com/sciences-competition

TechFest STEM Next Essay Competition
STEM-themed essay competition to inspire future innovators.
https://techfest.org.uk/education/ages-over-11/stem-next-essay

Cambridge Research Essay Competition
Challenging essay prompts across STEM fields for ambitious students.
https://cambridge-research.org/essay-competition/

IPEM-WCSIM Essay Prize
Essay competition exploring topics in medical physics and engineering.
https://www.ipem.ac.uk/get-involved/prizes-and-awards/2025-application-form-ipem-wcsim-essay-prize/

UKCA Harding Essay Competition
Essay competition on atmospheric or climate science hosted by the University of Edinburgh.
https://www.ph.ed.ac.uk/news/2025/ukca-harding-essay-competition-2025-25-05-01

Libra Education Science Essay Prizes
Essay competitions in science designed to stretch high-achieving students.
https://www.libraeducation.co.uk/science-essay-prizes

STEM Competitions Community Hub
Directory of STEM competitions across disciplines for UK students.

https://community.stem.org.uk/browse/stem-competitions

Smallpeice Trust Engineering & Science Challenges
Hands-on STEM challenges for school students, including physics-based projects.
Smallpeice Trust
https://www.smallpeicetrust.org.uk/engineering-at-school

IOP Schools and Colleges Competition
Regular quizzes and challenges hosted by the IOP for school students.
https://www.iop.org/strategy/limit-less/the-eurekas

Scholarships & Bursaries

IOP Support & Grants
Grants and funding opportunities for students pursuing physics.
https://www.iop.org/about/support-grants

University of Bristol – Physics Funding
Postgraduate physics scholarships and bursaries.
https://www.bristol.ac.uk/physics/study-with-us/postgraduate/funding.html

Royal Holloway Physics Scholarship
Financial support for undergraduate physics students.
https://www.royalholloway.ac.uk/studying-here/fees-and-funding/scholarships/physics-scholarship/

University of Manchester Scholarships
Various scholarships and bursaries for undergraduate students.
https://www.manchester.ac.uk/study/undergraduate/fees-and-funding/scholarships-and-bursaries/

University of Surrey Physics Scholarship
Scholarships for students enrolling in physics programmes.
https://www.surrey.ac.uk/fees-and-funding/scholarships-and-bursaries/physics-undergraduate-scholarship-2025

University of York Physics Funding
Financial support for physics, engineering, and technology students.
https://www.york.ac.uk/physics-engineering-technology/study/funding/

Arkwright Engineering Scholarships
Prestigious scholarships for students interested in engineering and applied physics.
https://www.arkwright.org.uk/

Student Voice: Physics at King's College London
🎓 Meet the Student - Humayra

🌟 University Life & Background
Q: Tell us a bit about yourself and your journey into studying physics.

I'm from South Wales and went to a state school for both primary and secondary. To be honest, I didn't enjoy physics at GCSE. I found circuits confusing, and the concepts just didn't click. Despite that, I chose it for A-Levels.

I failed my first topic test and seriously questioned whether it was the right choice. But I stuck with it, and things started to make more sense. We covered topics like composite materials and electromagnetism, which helped me see how physics explains so much about the world. I had brilliant teachers who made the subject come alive, and eventually, physics became my favourite A-Level. I realised that doing it as a degree would help me understand the world on a much deeper level.

💭 Why Physics?
Q: What made you choose to study physics at university?

Physics wasn't something I enjoyed from the start. At GCSE, topics like dynamics and forces just felt pointless to me. I didn't see how they explained the world the way biology did. But during A-Levels, things changed. I began to understand how solving complex problems and using tools like vectors and derivatives could reveal how systems work. I started watching YouTube videos to help with class topics, but that quickly turned into a deep dive into channels like Veritasium and PeterSripol (who built and flew his own planes). That opened my eyes to what studying physics could lead to.

I also started reading books by Michio Kaku and Richard Feynman (The Pleasure of Finding Things Out is a book by Feynman which I really recommend. It's a collection of interviews with him going into his life and showing insight to how he became such a brilliant scientist). That's when I knew I wanted to take it further.

🚧 Challenges & Starting Uni
Q: What challenges did you face when applying or starting uni?

Surprisingly, I had a lot of confidence going into the application process. I was lucky my school gave me opportunities to explore the subject through programs like Sutton Trust. Even though I was struggling with A-Levels (I got a U in my final maths mock before exams), I still had a gut feeling it would work out. I had support from school and an older sibling familiar with the process, which really helped.

But starting university was a different story. I went to lectures and couldn't understand a word. The notes felt like they were written in another language. I failed a lot of first-year exams, and that hit hard. It didn't feel like sixth form. The learning style was completely different. Eventually, I realised I had to just keep working through the problem sets and let the understanding build over time. Everyone learns differently, and it took me a while to figure out what worked for me.

🧭 Career Awareness
Q: Were you aware of the careers physics could lead to?

I had a rough idea. I knew physics could lead to careers in engineering, finance, and academia but I didn't know the specifics. When I got to university, I initially felt limited. I was interested in data science but didn't feel confident in my coding skills. Engineering felt out of reach because I hadn't studied it directly. But over time, I realised physics gives you a lot of transferable skills. You don't have to have everything figured out, you can learn things like coding or engineering principles through internships, graduate schemes, or self-study. I've learned it's more about your willingness to learn and problem-solve than having the "perfect" background.

🔄 Where I Am Now
Q: What's happening in your STEM journey right now?

I'm currently going into my third year studying Physics BSc at King's College London. I've started looking into work experience this year. During term time, I worked at a robotics teaching company where I helped with admin, created advertisements, and learned about the curriculum. The year before, I worked at a tutoring centre, which gave me good insight into education and communication.

🎯 Looking Ahead
Q: What are your future goals or dream career?

I want to do something that helps people. One path I'm considering is teaching, and I'd love to run a robotics club alongside that, giving high school students early exposure to STEM, creativity, and problem-solving. I think robotics is a great hands-on way to explore ideas and bring concepts to life.

I'm also interested in going into engineering and trying out different roles. I'm still exploring the specific fields, but I know I want a job that involves solving problems and building things that make a difference.

💬 Final Advice
Q: What advice would you give to someone unsure about studying physics?

Know what you're signing up for. Physics is more conceptual than I expected, and the derivations can get tough. But along the way, you get to learn some incredible maths and understand powerful systems like electromagnetism and thermal physics.
If you're heavily leaning toward engineering, seriously consider that route too. If what excites you about physics is understanding how things work, engineering might offer more of that hands-on experience.

That said, I'm glad I chose physics. It's taught me so much and given me a solid foundation I can apply in many directions. You don't have to have it all figured out. Just be curious, keep learning, and stay open to where it can take you.